

Amendments to the Claims

The following listing of claims will replace all prior versions and listings of claims in the application:

Listing of Claims:

1. – 17. cancelled.

18. (currently amended) A computer implemented method for recognition of patterns in a digital image, comprising:

creating a vector set comprising a plurality of image characteristic vectors, the vector set corresponding to an image characteristic;

identifying a candidate region of an image, the candidate region comprising a plurality of candidate region vectors;

determining a correlation for each candidate region vector in the plurality of candidate region vectors with each image characteristic vector in the vector set; and

averaging the correlations to determine the probability that the candidate region exhibits the image characteristic.

19. (currently amended) The method of claim 18, wherein the determining step further comprises dividing the number of times ~~a~~ an image characteristic vector is observed in the candidate region by the number of times ~~a~~ the image characteristic vector is observed overall.

20. – 25. cancelled.

26. (new) The method of claim 18, wherein the candidate region of an image comprises the entire image.

27. (new) The method of claim 18, wherein the candidate region of an image comprises the a portion of entire image.

28. (new) The method of claim 27, wherein the candidate region of an image comprises a portion of a microscope slide sample.

29. (new) The method of claim 18, wherein a high average of the correlations indicates a high probability of a match between an image pattern in the candidate region of the image and the image characteristic.

30. (new) The method of claim 18, wherein a low average of the correlations indicates a low probability of a match between an image pattern in the candidate region of the image and the image characteristic.

31. (new) The method of claim 18, further comprising creating a plurality of vector sets, wherein each vector set comprises a plurality of image characteristic vectors, the plurality of vector sets corresponding to a plurality of image characteristics.

32. (new) The method of claim 31, wherein the determining step further comprises determining a correlation for each candidate region vector in the plurality of candidate region vectors with each image characteristic vector in a plurality of vector sets.

33. (new) A computer implemented method for recognition of patterns in a digital image, comprising:

- receiving an identification of a region of a digital image containing a desired image characteristic;

- creating a vector set for the identified region, the vector set comprising a plurality of image characteristic vectors, the vector set corresponding to the desired image characteristic;

- receiving an identification of a candidate region of a digital image, the candidate region comprising a plurality of candidate region vectors;

correlating each candidate region vector in the plurality of candidate region vectors with each image characteristic vector in the vector set to provide a plurality of correlations; and

averaging the plurality of correlations to determine a probability that the candidate region includes the desired image characteristic.

34. (new) A system for recognition of patterns in a digital image, comprising:

a vocabulary comprising a plurality of image vectors, each image vector including a plurality of values representing pixel intensities for a plurality of pixels in a subsection of a digital image;

a plurality of vector sets, each vector set including a plurality of image vectors and corresponding to a desired image characteristic;

a correlation module configured to correlate each image vector in a candidate region of a digital image with each image vector in a plurality of vector sets to determine a probability that the desired image characteristic is present in the candidate region of a digital image.